

Walter Reed Army Medical Center: Main Campus Electrical Distribution System

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J01 Walter Reed Army Medical Center Electrical Distribution System

J01.1 Walter Reed Army Medical Center Overview

The Main Campus of Walter Reed Army Medical Center (WRAMC) is located in northern Washington, D.C., at 7100 Georgia Ave. N.W., between Rock Creek Park and Georgia Avenue near the Maryland - District of Columbia boundary. WRAMC is staffed by about 600 physicians, 535 registered nurses, and 600 licensed practical nurses. The host command is the U.S. Army Medical Command. The WRAMC mission is multi-faceted, and includes:

- (1) provision of advanced and sub-specialty health care and services to soldiers, their families, and a large community of military retirees.
- (2) Medical education and training, which contribute to the Army medical department of tomorrow.
- (3) Medical research for our soldiers and patients, to strengthen the armed forces of the future

J01.2 Electrical Distribution System Description

J01.2.1 Electrical Distribution System Fixed Equipment Inventory

The Walter Reed Army Medical Center (WRAMC) Main Campus electric distribution system consists of all appurtenance physically connected to the distribution systems from the point in which the distribution system enters the Base, and/or Government ownership currently starts, to the point of demarcation defined by the real estate instruments, or as otherwise identified in this Section. Unless otherwise identified in this Section, the point of demarcation will be the building footprint. The system may include, but is not limited to, substations, transformers, underground and overhead circuits, utility poles, switches, vaults, and lighting fixtures. The following description and inventory is included to provide the Offeror with a general understanding of the size and configuration of the distribution system. The inventory is assumed to be approximately 90 percent complete. The Offeror shall base the proposal on site inspections, information in the bidder library, other pertinent information, and to a lesser degree the following description. Under no circumstances shall the successful Contractor be entitled to any rate adjustments based on the accuracy of the following description and inventory.

J01.2.1.1 Description

The WRAMC Main Campus purchase electrical power from Potomac Electric Power Company (PEPCO).

The WRAMC Main Campus is fed via four PEPCO 13.2kV feeders at the main switching station in Building 95. (This switching station is in deteriorated condition, and the Offeror should consider its replacement). All loads on WRAMC Main Campus, except Building 18 and 54, are fed through this switching station. Three incoming feeders are designated as normal and one is designated as emergency. Each incoming feeder is rated for 1200 Amps, or 27 MVA; however, the feeders are relayed for 400 A, or 9 MVA. The incoming feeders are connected to three buses configured in a

"Ring-Bus". Each bus section is rated for 1200 Amps. Each of the bus sections in a ring serves one bus with five outgoing feeders. There is no voltage transformation in the substation. Each outgoing feeder is relayed for 150 Amps (approximately 3.4 MVA), except feeder's 1E, 2E, and 3E, which have 400 Amp relay settings. These three feeders provide dedicated service to the main hospital and Building 2.

There are approximately 5.2 miles of underground 13.2 kV distribution cable installed in duct banks of the WRAMC Main Campus. With some exceptions, the feeders are all radial, but the duct system is configured in a double loop that allows major facilities to be served by two or three feeders via different routes from the switching station. Manholes are installed in the duct banks at 100 to 300 foot intervals, depending on straightness of the runs and need for cable taps.

There are approximately 59 distribution transformers on the WRAMC Main Campus, approximately 46 of which will be transferred with privatization actions. These transformers step down the 13.2 kV distribution power to a utilization voltage of 4160/2400 Volts, 480/277 Volts, or 208/120 Volts. Most of the transformers are installed in underground vaults outside the building. Some of the larger buildings have transformers installed in their electrical rooms feeding directly into low voltage switchboards and panels.

Two buildings (Buildings 18 and 54) are served directly from PEPCO feeders. Building 18 was not surveyed. Building 54 has two 13.2 kV feeders serving a metal-clad switchgear lineup of two buses with one incoming and three outgoing circuit breakers on each bus. A ninth circuit breaker is installed as a bus tie in Building 54. Power is distributed within the building via 13.2 kV cables from the six outgoing circuit breakers. PEPCO metering is installed on the incoming feeders at each bus in Building 54.

There are approximately 194 pole-mounted streetlights and floodlights on the WRAMC Main Campus which are included in the privatization action. There are additional security lights mounted on the buildings or otherwise fed from breaker panels/switchgear within the buildings, which are not included in the privatization action.

The point for service demarcation for Buildings 1 and 40 will be inside the buildings; it will include the transformers, and terminate at the load side of the circuit protectors. This will include four transformers and circuit protectors for Building 1, and eight for Building 40. Service demarcation for Buildings 2, 20, and 48 will be inside the buildings, terminating at the primary side of the disconnect switches; it will not include the transformers. This will include twelve disconnects for Building 2, one for Building 20, and three for Building 48. For the transformer feeding the 55HP chiller motor in Building 40, the point of demarcation will be the secondary side of the transformer, which is located in the transformer vault. The remainder of the distribution system demarcation points will be at the secondary side of transformers, which are located external to buildings; this includes a total of thirty-four points.

A new Physical Fitness Building is currently under construction. Upon completion, distribution system electrical load will increase by approximately 1000KVA. Completion is expected to occur after system transfer to the successful Offeror.

J01.2.1.2 Inventory

Table 1 provides a general listing of the major electrical system fixed assets for the Walter Reed Army Medical Center electrical distribution system included in the purchase. The systems will be

sold in an “as is, where is” condition without any warrant, representation, or obligation on the part of the Government to make any alterations, repairs, or improvements. All ancillary equipment attached to and necessary for operating the system, though not specifically mentioned here in, is considered part of the purchased utility.

TABLE 1

Fixed Inventory

Electrical Distribution System Inventory, WRAMC Main Campus

ITEM			SIZE	QTY.	UNIT	APPROXIMATE YEAR OF CONSTRUCTION
UNDERGROUND FEEDERS			3-#1/0 AWG	22, 930	lf	1960
			3- #500MCM	4,500	lf	1960
TRANSFORMERS						
	13.2kv/208	pri/sec	150 KVA	1	ea	1994
	13.2kv/208	pri/sec	150 KVA	3	ea	1993
	13.2kv/480	pri/sec	150 KVA	1	ea	1996
	13.2kv/208	pri/sec	225 KVA	1	ea	1993
	13.2kv/208	pri/sec	225 KVA	1	ea	1991
	13.2kv/480	pri/sec	225 KVA	1	ea	1994
	13.2kv/208	pri/sec	300 KVA	2	ea	1994
	13.2kv/208	pri/sec	300 KVA	9	ea	1993
	13.2kv/208	pri/sec	300 KVA	1	ea	1991
	13.2kv/208	pri/sec	300 KVA	1	ea	1986
	13.2kv/208	pri/sec	300 KVA	1	ea	1981
	13.2kv/208	pri/sec	300 KVA	1	ea	1971
	13.2kv/480	pri/sec	300 KVA	1	ea	1981
	13.2kv/480	pri/sec	300 KVA	1	ea	1961
	13.2kv/208	pri/sec	500 KVA	3	ea	1993
	13.2kv/208	pri/sec	500 KVA	2	ea	1998
	13.2kv/480	pri/sec	500 KVA	1	ea	1979
	13.2kv/480	pri/sec	500 KVA	1	ea	1996
	13.2kv/480	pri/sec	500 KVA	1	ea	1991
	13.2kv/480	pri/sec	500 KVA	1	ea	1981
	13.kv/480	pri/sec	500 KVA	1	ea	1971
	13.2kv/208	pri/sec	750 KVA	2	ea	1993
	13.kv/480	pri/sec	750 KVA	1	ea	1993
	13.2kv/480	pri/sec	1000 KVA	1	ea	1984
	13.2kv/208	pri/sec	1500 KVA	1	ea	1991

	13.2kv/480 pri/sec	1500 KVA	6	ea	1976
NETWORK PROTECTOR		120/208v, 1200Amp	12	ea	1960
STREETLIGHTS/POLE MTD. FLOODLIGHTS			194	ea	(various)
SWITCHGEAR -----See paragraph J01.2.1.1 for description-----					

Notes:

MVA = nominal kilovolt amperes
ea = each
LF = linear feet
sf = square feet

Note 1: There are approximately 194 pole-mounted streetlights/floodlights fed from sources external to the buildings. Lights are of various configurations, capacities, and ages. (There are additional lights, fed from sources within the buildings, that are not part of the privatization action).

J01.2.2 Electrical Distribution System Non-Fixed Equipment and Specialized Tools Inventory

Table 2 lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment and tools. The successful Contractor shall provide any and all equipment, vehicles, and tools, whether included in the purchase or not, to maintain a fully operating system under the terms of this contract.

TABLE 2

Spare Parts

Electrical Distribution System WRAMC Main Campus

Qty	Item	Make/Model	Description	Remarks
	None Identified			

TABLE 3
Specialized Equipment and Vehicles
Electrical Distribution System WRAMC Main Campus

Quantity	Item	Description	Remarks
None identified			

J01.2.3 Electrical Distribution System Manuals, Drawings, and Records Inventory

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
Electrical Distribution System WRAMC Main Campus

Qty	Item	Description	Remarks
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Miscellaneous Manuals, Drawings, and Records, which are included in the Technical Library

J01.3 Specific Service Requirements

The service requirements for the Walter Reed Army Medical Center Main Campus electrical distribution system are as defined in Section C, *Description/Specifications/Work Statement*.

J01.4 Current Service Arrangement

Currently, Potomac Electric Power Company supplies electric service to the Walter Reed Army Medical Center Main Campus. Electric power annual consumption at the Main Campus during FY98 was approximately 111,907,660 kilowatt-hours (kWh). The monthly maximum demand was approximately 11,820,900 kilowatt-hours (kWh) and occurred in September 1998.

J01.5 Secondary Metering

The Base may require secondary meters for internal billings of their reimbursable customers, utility usage management, and energy conservation monitoring. The Contractor shall assume full ownership and responsibility for existing and future secondary meters IAW Paragraph C.3.

J01.5.1 Existing Secondary Meters

Table 5 provides a listing of the existing (at the time of contract award) secondary meters that will be transferred to the Contractor. The Contractor shall provide meter readings once a month for all secondary meters IAW Paragraph C.3 and J01.6 below.

TABLE 5

Existing Secondary Meters
Electrical Distribution System WRAMC Main Campus

Meter Location	Meter Description
None identified	

J01.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in Table 6. New secondary meters shall be installed IAW Paragraph C.13, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Paragraph C.3 and J01.6 below.

TABLE 6

New Secondary Meters
Electrical Distribution System WRAMC Main Campus

Meter Location	Quantity	Meter Description
Bldg 95	3	Feeds Bldg. 2
Bldg 95	3	Feeds Bldg. 48
Bldg 95	1	Feeds Bldg 49
Bldg 1	5	
Bldg 1D	2	exst. Xfmr has 2 secondaries; 1 meter/secondary
Bldg 15	2	
Bldg 12	1	
Bldg 6	1	
Bldg 7	1	
Bldg T-20	2	
Bldg 38	1	
Bldg 4	1	
Bldg 88	1	
Bldg 3	1	
Bldg 52	2	exst. Xfmr has 2 secondaries; 1 meter/secondary
Bldg 41	1	
Bldg 55	1	

TABLE 6 (cont'd)
New Secondary Meters
Electrical Distribution System WRAMC Main Campus

Meter Location	Quantity	Meter Description
Bldg 57	1	
Bldg 11	1	
Bldg 20	1	
Bldg 17	1	
Bldg 91	1	
Bldg 83	1	
Bldg 14	1	
Bldg T-2	2	
New Physical Fitness Center	1	
Transformer vault at 15 th Street Loop	1	Family Housing

J01.6 Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. Invoice (IAW Paragraph G.2). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to the person identified at time of contract award.
2. Outage Report. The Contractor's monthly outage report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to the person identified at time of contract award.
3. Meter Reading Report. The monthly meter reading report shall show the current and previous month readings for all identified secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting

Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to the person identified at time of contract award.

J01.7 Energy Savings Projects

IAW Paragraph C.3, Requirement, the following projects have been implemented on the distribution system by the Government for energy conservation purposes.

?? None

J01.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Main Campus boundary.

J01.9 Off-Installation Sites

The Walter Reed Army Medical Center Forest Glen Annex is located in Silver Spring, Maryland.

J01.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 7** lists service connections and disconnections required upon transfer of the Walter Reed Army Medical Center Main Campus electrical distribution system.

TABLE 7
Service Connections and Disconnection's
Electrical Distribution System WRAMC Main Campus

Location	Description
None Identified	

J01.11 Government Recognized System Deficiencies

Table 8 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the Walter Reed Army Medical Center Main Campus Electrical Distribution System. If the utility system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the timing of any and

all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered through Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AC.

TABLE 8
System Deficiencies
Electrical Distribution System WRAMC Main Campus

Project Location	Project Description
Although not currently identified as a Government Project, the existing Switchgear in Building 95 is recognized as being deficient.	

J01.12 Electric Distribution System Points of Demarcation

The point of demarcation is defined as the point on the distribution system where ownership changes from the Grantee to the building owner. This point of demarcation will typically be at the point the utility enters a building structure or the load side of a transformer within a building structure. **Table 9** identifies the type and general location of the point of demarcation with respect to the building for each scenario. **Table 10** lists anomalous points of demarcation that do not fit any of the scenarios of Table 9. **Table 11** includes any parcels of land that the Grantee will need to be granted exclusive use under the right-of-way.

TABLE 9
Points of Demarcation
Electrical Distribution System WRAMC Main Campus

Point of Demarcation	Applicable Scenario	Sketch
Point of demarcation is the transformer secondary terminal spade.	Pad Mounted Transformer located outside of structure with underground service to the structure and no meter exists.	
Down current side of the meter	Residential service (less than 200 amps and 240V 1-Phase), and three phase self contained meter installations. Electric Meter exists within five feet of the exterior of the building on an underground secondary line.	

Point of Demarcation	Applicable Scenario	Sketch
Point of demarcation is the transformer secondary terminal spade.	Three Phase CT metered service.	<p>Distribution Line</p> <p>Meter</p> <p>Pad Mounted Transformer</p> <p>Structure</p> <p>Point of Demarcation</p> <p>Distribution Line</p>
Secondary terminal of the transformer inside of the structure	Transformer located inside of structure and an isolation device is in place with or without a meter Note: Utility Owner must be granted 24-hour access to transformer room.	<p>Distribution Line</p> <p>Service Line</p> <p>Point of Demarcation</p> <p>Structure</p> <p>Isolation Device</p> <p>Distribution Line</p>
Secondary terminal of the transformer inside of the structure	Transformer located inside of structure with no isolation device in place. Note: Utility Owner must be granted 24-hour access to transformer room.	<p>Distribution Line</p> <p>Service Line</p> <p>Point of Demarcation</p> <p>Structure</p> <p>Distribution Line</p>
Point of demarcation is the point where the overhead conductor is connected to the weatherhead.	Electric meter is connected to the exterior of the building on an overhead secondary line.	<p>Service Line</p> <p>Utility Pole</p> <p>Pole Mounted Transformer</p> <p>Structure</p> <p>Point of Demarcation</p> <p>Meter</p>
Point of demarcation is the point where the overhead conductor is connected to the weatherhead.	Pole Mounted Transformer located outside of structure with secondary attached to outside of structure with no meter.	<p>Service Line</p> <p>Utility Pole</p> <p>Pole Mounted Transformer</p> <p>Structure</p> <p>Point of Demarcation</p>
Point of demarcation is the point where the overhead conductor is connected to the weatherhead.	Service may be overhead or underground. A disconnect switch or junction box is mounted to the exterior of the structure with no meter.	<p>Service Line</p> <p>Utility Pole</p> <p>Pole Mounted Transformer</p> <p>Structure</p> <p>Point of Demarcation</p> <p>Disconnect or Junction Box</p>

TABLE 10
 Anomalous Points of Demarcation
 Electrical Distribution System WRAMC Main Campus

Building No.	Point of Demarcation Description
None	

TABLE 11
 Plants
 Electrical Distribution System WRAMC Main Campus

Description	Facility #	State Coordinates	Other Information
None			